

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings of claims in the application:

#### **Listing of Claims:**

Claims 1-21 (Canceled)

Claim 22 (New): A cartridge for counting and discriminating a plurality of types of blood cells in a blood sample in one counting operation, comprising a housing with a first liquid storage chamber for holding a lysing reagent with a lysing and diluting capability sufficient for lysing of erythrocytes while maintaining counting ability of other blood cell types, a first mixing chamber and a first collection chamber separated by a wall containing a first orifice for the passage of the cells between the first mixing chamber and the first collection chamber, first cell characterization means for characterizing cells passing through the first orifice, a bore in the outer surface of the housing for entrance of the blood sample, communicating with

a first sampling member positioned in the housing for sampling the blood sample and having a first cavity for receiving and holding the blood sample, the member being movably positioned in relation to the housing in such a way that, in a first position, the first cavity is in communication with the bore for entrance of the blood sample into the first cavity, and, in a second position, the first liquid storage chamber communicates through the first cavity with the first mixing chamber so that the blood sample can be flushed with discharged liquid from the first liquid storage chamber into the first mixing chamber.

Claim 23 (New): A cartridge according to claim 22, wherein the lysing reagent contains a surfactant.

Claim 24 (New): A cartridge according to claim 22, wherein the surfactant comprises a saponin.

Claim 25 (New): A cartridge according to claim 22, wherein the lysing reagent comprises a quaternary ammonium salt.

Claim 26 (New): A cartridge according to claim 25, wherein the lysing reagent further comprises N-(1-acetamido)iminodiacetic acid to further assist the quaternary ammonium salts in minimizing debris stemming from hemolysed red blood cells.

Claim 27 (New): A cartridge according to claim 22, wherein the first liquid storage chamber further comprises compounds selected from the group consisting of N-(1-acetamido)iminodiacetic acid, procaine hydrochloride, and 1,3-dimethylurea for stabilizing the leukocytes during the hemolysis of the red blood cells.

Claim 28 (New): A cartridge according to claim 22, wherein the first liquid storage chamber further comprises compounds selected from the group consisting of N-(1-acetamido)iminodiacetic acid, sodium chloride, and sodium sulphate for adjusting the pH-value and the osmotic pressure of the diluent.

Claim 29 (New): A cartridge according to claim 22, wherein the first liquid storage chamber further comprises compounds selected from the group consisting of 1,3-dimethylolurea and chlorhexidine diacetate for minimizing bacterial growth.

Claim 30 (New): A cartridge according to claim 22, wherein the first liquid storage chamber further comprises compounds selected from the group consisting of potassium cyanide, tetrazole, and triazole for converting the haemoglobin species to an end product suitable for spectrophotometric analysis.

Claim 31 (New): A cartridge according to claim 22, wherein the diluent contains inorganic salts rendering the liquid a high electrical conductivity.

Claim 32 (New): A cartridge according to claim 22, wherein the lysing reagent comprises 1,2,4-Triazole, dodecyltrimethylammonium chloride, and hexadecyltrimethylammonium bromide.

Claim 33 (New): A cartridge according to claim 22, wherein other cell types than erythrocytes are reduced in size and their concentration is determined by counting a representative fraction of the respective cells.

Claim 34 (New): A cartridge according to claim 22, wherein the other cell types include sub-populations of leukocytes, such as lymphocytes, monocytes and granulocytes, which are selectively reduced in size by the lysing reagent and can be counted in a cell counter.

Claim 35 (New): A cartridge according to claim 22, further comprising a second mixing chamber and a second collection chamber separated by a second wall containing a second orifice for the passage of the cells between the second mixing chamber and the second collection chamber, second cell characterization means for characterizing cells passing through the second orifice, and wherein in the second position, the first cavity is in communication with the first mixing chamber for entrance of liquid from the first mixing chamber into the first cavity, and, in a third position, the first cavity is in communication with the second mixing chamber for discharge of the liquid in the first cavity into the second mixing chamber.

Claim 36 (New): A cartridge according to claim 22, further comprising

a second mixing chamber and a second collection chamber separated by a second wall containing a second orifice for the passage of the cells between the second mixing chamber and the second collection chamber,

second cell characterization means for characterizing cells passing through the second orifice, and

a second sampling member positioned in the housing for sampling a small and precise volume of liquid from the first mixing chamber and having a second cavity for receiving and holding the sampled liquid, the member being movably positioned in relation to the housing in such a way that, in a first position, the second cavity is in communication with the first mixing chamber for entrance of liquid from the first mixing chamber into the first cavity, and, in a second position, the second cavity is in communication with the second mixing chamber for discharge of the sampled liquid in the second cavity into the second mixing chamber.

Claim 37 (New): A cartridge according to claim 22, further comprising a reagent chamber positioned adjacent to the first mixing chamber for holding a reagent to be entered into the first mixing chamber.

Claim 38 (New): A cartridge according to claim 37, further comprising a breakable seal separating the reagent chamber from the first mixing chamber.

Claim 39 (New): A cartridge according to claim 22, wherein a mixing member is positioned in at least one of the mixing chambers.

Claim 40 (New): A cartridge according to claim 22, further comprising a sensor for characterization of the liquid.

Claim 41 (New): A cartridge according to claim 40, wherein the sensor for characterization of the liquid is adapted for spectrophotometric characterization of the liquid.

Claim 42 (New): A cartridge according to claim 22, wherein the orifice has a diameter in the range from 30  $\mu\text{m}$  to 100  $\mu\text{m}$ .

Claim 43 (New): A cartridge according to claim 42, wherein the orifice has a diameter in the range from 35  $\mu\text{m}$  to 50  $\mu\text{m}$ .

Claim 44 (New): A cartridge according to claim 42, wherein the orifice has a diameter in the range from 30  $\mu\text{m}$  to 45  $\mu\text{m}$ .

Claim 45 (New): A cartridge according to claim 44, wherein the orifice has a diameter in the range from 35  $\mu\text{m}$  to 40  $\mu\text{m}$ .

Claim 46 (New): A cartridge according to claim 45, wherein the orifice has a diameter substantially equal to 40  $\mu\text{m}$ .